

Claims

1. A method for treating a subject to inhibit a vaso-occlusive event comprising administering to a subject in need of such treatment an agent that reduces platelet count in the subject in an amount effective to reduce platelet count in the subject to at least a low normal level.
5
2. The method of claim 1, wherein subject is treated to inhibit a vaso-occlusive event that is a pathological narrowing or occlusion of a stent, blood vessel, or vascular graft.
- 10 3. The method of claim 1, wherein subject is treated to inhibit a vaso-occlusive event that is intimal hyperplasia.
4. The method of claim 1, wherein subject is treated to inhibit a vaso-occlusive event that is a thrombotic event.
15
5. The method of claim 4, wherein the thrombotic event is a thromboembolic event.
6. The method of claim 4, wherein the thrombotic event is a primary thrombotic event.
20
7. The method of claim 4, wherein the thrombotic event is a secondary thrombotic event.
- 25 8. The method of claim 4, wherein the thrombotic event is selected from the group consisting of arterial thrombosis, coronary thrombosis, venous thrombosis, microvascular thrombosis, stent thrombosis, graft thrombosis and heart valve thrombosis.
9. The method of claim 4, wherein the vaso-occlusive event is selected from the group consisting of myocardial infarction, stroke, transient ischemic attack and coronary stenosis.
30

10. The method of claim 1, wherein the subject has a normal platelet count prior to treatment.

5 11. The method of claim 1, wherein the platelet count is reduced to a below normal level.

12. The method of claim 11, wherein the subject has an above normal platelet count prior to treatment.

10 13. The method of claim 1, wherein the subject is otherwise free of symptoms calling for treatment with the agent.

14. The method of claim 12, wherein the subject does not have a hematological proliferative disorder.

15 15. The method of claim 1, wherein the subject is apparently healthy.

16. The method of claim 1, wherein the subject exhibits symptoms of a vaso-occlusive event.

20 17. The method of claim 1, wherein the subject is a human.

18. The method of claim 1, wherein the subject has an abnormally elevated risk of a thrombotic event.

25 19. The method of claim 1, wherein the subject has vascular disease.

20. The method of claim 19, wherein the vascular disease is selected from the group consisting of arteriosclerosis, cardiovascular disease, cerebrovascular disease, renovascular disease, mesenteric vascular disease, pulmonary vascular disease, ocular vascular disease and peripheral vascular disease.

30

21. The method of claim 1, wherein the subject has had a primary vaso-occlusive event.

22. The method of claim 1, wherein the subject has a condition selected from the group consisting of hypercholesterolemia, hypertension and atherosclerosis.

23. The method of claim 1, wherein the subject will undergo an elective surgical procedure.

24. The method of claim 1, wherein the subject has undergone a surgical procedure.

25. The method of claim 23, wherein the surgical procedure is selected from the group consisting of coronary angiography, coronary stent placement, coronary by-pass surgery, carotid artery procedure, peripheral stent placement, vascular grafting, thrombectomy, peripheral vascular surgery, vascular surgery, organ transplant, artificial heart transplant, vascular angioplasty, vascular laser therapy, vascular replacement and vascular stenting.

26. The method of claim 24, wherein the surgical procedure is selected from the group consisting of coronary angiography, coronary stent placement, coronary by-pass surgery, carotid artery procedure, peripheral stent placement, vascular grafting, thrombectomy, peripheral vascular surgery, vascular surgery, organ transplant, artificial heart transplant, vascular angioplasty, vascular laser therapy, vascular replacement and vascular stenting.

27. The method of claim 1, wherein the agent is anagrelide, or a derivative thereof.

28. The method of claim 25, wherein the effective amount is in the range of 30 $\mu\text{g/kg/day}$ to 150 $\mu\text{g/kg/day}$.

29. The method of claim 25, wherein the effective amount is in the range of 1 $\mu\text{g/kg/day}$ to 150 $\mu\text{g/kg/day}$.

30. The method of claim 1, wherein the agent is administered for at least one week.

31. The method of claim 1, wherein platelet count is reduced by at least 10%.

32. The method of claim 1, wherein platelet count is reduced by at least 20%.

33. The method of claim 1, wherein platelet count is reduced by at least 50%.

34. The method of claim 1, wherein platelet count is reduced to below 200×10^3 platelets per μl .

35. The method of claim 1, wherein platelet count is reduced to below 150×10^3 platelets per μl .

36. The method of claim 1, wherein platelet count is reduced to below 100×10^3 platelets per μl .

37. The method of claim 1, wherein platelet count is reduced by at least 10% and to above 200×10^3 per μl .

38. The method of claim 1, wherein the agent is administered with an agent for treating vascular disease or complication.

39. The method of claim 38, wherein the an agent for treating vascular disease or complication is an anti-thrombotic agent.

40. The method of claim 39, wherein the anti-thrombotic agent is selected from the group consisting of anti-coagulant agents, fibrinolytic agents and inhibitors of platelet function.

41. The method of claim 40, wherein the inhibitors of platelet function are selected from the group consisting of aspirin, abciximab, clopidogrel and dipyridamole.

42. The method of claim 40, wherein the anti-coagulant agents are selected from the group consisting of glycosoaminoglycans and vitamin K antagonists.

5 43. The method of claim 40, wherein the fibrinolytic agents are selected from the group consisting of plasminogen activators, plasmin and plasminogen.

44. The method of claim 43, wherein the plasminogen activators are selected from the group consisting of tissue plasminogen activator (TPA), streptokinase and urokinase.

10

45. The method of claim 23, wherein the agent is administered prior to the elective surgery.

15

46. The method of claim 1, wherein the agent is administered by a parenteral route.

47. The method of claim 1, wherein the agent is administered by an enteral route.

48. The method of claim 1, wherein the agent is administered in a sustained release device.

20

49. The method of claim 21, wherein the agent is administered following the primary vaso-occlusive event.

25

50. A sustained release device comprising an agent that reduces platelet count in a subject, wherein the agent is released for at least 7 days.

51. The sustained release device of claim 50, further comprising an agent for treating vascular disease or complication.

30

52. The sustained release device of claim 50, wherein the agent for treating vascular disease or complication is selected from the group consisting of an anti-coagulant agent, a fibrinolytic agent and an inhibitor of platelet function

53. The sustained release device of claim 50, wherein the agent is released in an amount effective to reduce platelet count in a subject to below normal levels.

5 54. The sustained release device of claim 50, wherein the agent is anagrelide or a derivative of anagrelide.

55. The sustained release device of claim 50, wherein the agent is released at a rate ranging from 30 $\mu\text{g/kg/day}$ to 150 $\mu\text{g/kg/day}$.

10 56. The sustained release device of claim 50, wherein the agent is released at a rate ranging from 1 $\mu\text{g/kg/day}$ to 150 $\mu\text{g/kg/day}$.

57. The sustained release device of claim 50, wherein the agent is released for at least 30 days.

15 58. The sustained release device of claim 50, wherein the agent is released for at least 6 months.

59. The sustained release device of claim 50, wherein the agent is released for at least 1 year.

60. The sustained release device of claim 50, wherein the agent is released for at least 5 years.

25 61. The sustained release device of claim 50, wherein the agent is released in an effective amount that does not affect platelet function.